AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph [00126] beginning at page 18, line 25 with the following rewritten version:

[00126]   In addition to setting the current month and day, and the current time, the setting mode ST4 is an operating mode for setting the warning alarm ON/OFF and setting the safety level. The safety level (not depicted), the alarm ON/OFF (not depicted), and the elevation rank (not depicted) are displayed in addition to the current month and day, the current year, and the current time in this setting mode ST4. Of these display items, it is possible to select one of two safety levels: a level for carrying out normal decompression calculation, and a level for carrying out decompression calculation presuming that the diver moves to a location that is one rank higher in elevation after diving. In the case that excessive inert gas has accumulated in the body from previous diving, the graph of inert gas in the body is displayed. The alarm ON/OFF is a function for setting the option of sounding a warning alarm from ~~a reporting device 13~~ a reporting device (e.g., the sound alarm 37 and/or the oscillation generator 38), and the alarm does not sound when the alarm is set to OFF. This is advantageous in devices in which battery power loss must be avoided to the extent possible, as in an information processing device for a diver, because inadvertent battery power loss from the consumption of power by the alarm can be avoided. The alarm is turned ON when the ascent velocity is violated, during decompression diving, and in other critical diving situations.

Please replace the paragraph [00186] beginning at page 29, line 17 with the following rewritten version:

[00186] The ascent/descent control function of the dive computer 4 of the second embodiment is implemented by way of ~~an ascent velocity measuring unit 71~~ an ascent velocity measuring unit 22, an ascent velocity violation determining unit 73, a diving results storage unit 74, a water thermometer 62, a notification unit 77, and a warning display unit 78, as shown in FIG. 27. The dive computer 4 of the second embodiment comprises an oxygen partial pressure calculating and

monitoring unit 75, and an oxygen partial pressure violation determining unit 76. The ~~ascent velocity measuring unit 71~~ ascent velocity measuring unit 22 measures the ascent velocity when an ascent is made on the basis of the measurement results from the timer 68 and the measurement results from the pressure gauge 61. The ascent velocity violation determining unit 73 compares the measurement results of the ~~ascent velocity measuring unit 71~~ ascent velocity measuring unit 22 and the preset reference ascent velocity data 72, and provides an ascent velocity violation warning when the current ascent velocity is higher than the reference ascent velocity that corresponds to ~~reference ascent velocity data 23~~ the reference accent velocity data 72. The diving results storage unit 74 stores diving history and other data related to diving. The oxygen partial pressure calculating and monitoring unit 75 calculates and monitors the oxygen partial pressure in the breathing gas. The oxygen partial pressure violation determining unit 76 determines whether the calculated oxygen partial pressure will result in oxygen poisoning or oxygen deficiency. The notification unit 77 provides warnings by way of the display unit, the sound alarm 37, and the oscillation generator 38. The warning display unit 78 displays warnings by way of the display unit 10.

Please replace the paragraph [00192] beginning at page 31, line 3 with the following rewritten version:

[00192]   The diving results storage unit 74 of the dive computer 4 stores the diving results data on the basis of the depth value that corresponds to the water pressure measured by the pressure gauge 61. In other words, a diving action that begins at a diving depth that is deeper than 1.5 m (depth value for determining the start of diving) and ends when the diving depth is once again shallower than 1.5 m is stored and held in the ~~RAM 57~~ RAM 54 as the diving results data in this interval. Here, the diving result data includes the diving date and time data, diving control number data, dive time data, maximum diving depth data, and water temperature data at the maximum diving depth, for example.

Please replace the paragraph [00199] beginning at page 32, line 26 with the following rewritten version:

[00199]   The respiratory air/inert gas partial pressure gauge 81 calculates the respiratory air/inert gas partial pressure PIN2(t), which is described hereinafter, on the basis of the water pressure P(t) at the current time t, which is the measurement result from the water pressure and ~~depth gauge 10~~ depth gauge 61. The respiratory air/inert gas partial pressure storage unit 82 thereby stores the respiratory air/inert gas partial pressure PIN2(t) that was calculated by the respiratory air/inert gas partial pressure gauge 81.

Please replace the paragraph [00202] beginning at page 33, line 16 with the following rewritten version:

[00202]   The water pressure and ~~depth gauge 10~~ depth gauge 61 outputs the water pressure P(t) that corresponds to the time t. Here, P(t) refers to the absolute pressure including atmospheric pressure. The respiratory air/inert gas partial pressure gauge 81 calculates and outputs the respiratory air/inert gas partial pressure PIN2(t) in the air being breathed by the diver, on the basis of the water pressure P(t) outputted from the water and ~~depth gauge 10~~ depth gauge 61. Here, the respiratory air/inert gas partial pressure PIN2(t) is calculated with the aid of the following expression (1) using the water pressure P(t).

Please replace the paragraph [00205] beginning at page 33, line 27 with the following rewritten version:

[00205]   The body inert gas partial pressure ~~calculating unit 64~~ calculating unit 85 calculates the body inert gas partial pressure for each tissue location in the body in which the breathing/purging of inert gas differs. As an example of a certain tissue, the body inert gas partial pressure PGT(tE) that is breathed/purged until the dive time t = t0 to tE is calculated with the aid of the following expression (2) as the body inert gas partial pressure PGT(t0) at the time of calculation (= t0).

Please replace the paragraph [00208] beginning at page 34, line 7 with the following rewritten version:

[00208]   The body inert gas partial pressure calculating unit 85 repeatedly calculates the body inert gas partial pressure PGT(t) as described above at a predetermined sampling cycle tE. The body inert gas partial pressure PGT(tE) calculated with the aid of the expression every sampling cycle, in addition to being supplied to the body inert gas <u>partial pressure</u> purge time guidance unit 87 and the allowable dive time guidance unit 88, is also supplied as PGT(t0) to the comparison unit 83 and the body inert gas partial pressure purge time guidance unit 87 at this time. This means that the PGT(tE) at the previous time of sampling was used as the PGT(t0) in the expression.

Please replace the paragraph [00215] beginning at page 35, line 5 with the following rewritten version:

[00215]   The reasons that the half saturation time HT is different when PGT(t0) (PIN2(t0) and when PGT(t0) (PIN2(t0) are described below. First, when PGT(t0) (PIN2(t0), inert gas is being purged from the body, and when PGT(t0) (PIN2(t0), inert gas is being absorbed by the body. That is to say, the half saturation time HT1 when purging inert gas is set longer than the half saturation time HT2 when absorbing inert gas because the purging of inert gas requires more time in comparison with the absorption of inert gas. By using a half saturation time HT that differs during purging and during absorption in this manner, the simulation of the amount of inert gas in the body can be carried out with exactness. Therefore, on the basis of the inert gas partial pressure that is computed by this virtual body inert gas calculating unit, it is possible to calculate a more accurate value when computing the allowable non-decompression time and the time required to purge inert gas from the body. The body inert gas ~~quantity~~ <u>partial pressure</u> calculating unit 85 allows the most recent body inert gas partial pressure to be obtained for the currently submerged diver by calculating the body inert gas partial pressure PGT(t) as described above.

Please replace the paragraph [00216] beginning at page 35, line 19 with the following rewritten version:

[00216]   The allowable non-decompression time and the time required to purge inert gas from the body are calculated as follows on the basis of the body inert gas partial pressure PGT(tE) that was computed as described above, and on the basis of the respiratory air/inert gas partial pressure PIN2(tE) that was calculated by the respiratory air/inert gas partial pressure gauge 81. The allowable non-decompression time is calculated by computing (tE −t0) when the PGT(tE) calculated in the expression becomes Ptol, which indicates the amount of allowable supersaturating inert gas for each tissue. Here, because the current point in time is considered to be t0, the body inert gas partial pressure PGT(tE) that was computed by the body inert gas ~~quantity~~ partial pressure calculating unit 85 is used as the PGT(t0) in the expression; and the respiratory air/inert gas partial pressure PIN2(tE) that was calculated by the respiratory air/inert gas partial pressure gauge 81 is used as the PIN2(t0).

Please replace the paragraph [00224] beginning at page 36, line 17 with the following rewritten version:

[00224]   Here, HT is the above-described half saturation time, and Pde is the inert gas partial pressure (hereinafter referred to as the allowed inert gas partial pressure) to be used in the purging of the residual inert gas from each tissue type, and both of these are known values. PIN2 is the inert gas partial pressure within each tissue at the time of ascent to the surface, and it is calculated by ~~the body inert gas quantity calculating unit 60~~ the body inert gas partial pressure calculating unit 85. For each tissue type, tZ is calculated with the aid of the above-described expression, and the largest value among them is the time required to purge inert gas from the body. The time required to purge inert gas from the body that is calculated in this manner is displayed in a surface mode, which is described below.